

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group  
Art Unit: 3643

Attorney  
Docket No.: TKA0032

Applicant: Yasushi KOHNO

Invention: METHOD OF PREVENTING  
DEFFECTIVE GERMINATION OR  
ROSETTE FORMATION OF SEED

Serial No: 10/007,186

Filed: November 5, 2001

Examiner: Andrea Valenti

Certificate Under 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner of Patents, Washington, D.C. 20231

on March 21, 2003

  
Michael S. Gzybowski

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BRIEF ON APPEAL

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Further to appellant's Notice of Appeal filed January 21, 2003 in connection with the above-identified application, appellant submits the present Brief on Appeal.

REAL PARTY IN INTEREST

Appellant has assigned this application to Agritecno Yazaki Co., Ltd. in an assignment which was executed on October 30, 2001, and filed in the United States Patent and Trademark Office on November 5, 2001, and recorded November 5, 2001 at Reel No. 012371 and Frame No. 0148.

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## RELATED APPEALS AND INTERFERENCES

There are no related cases involved in any appeal procedures or Interferences.

## STATUS OF CLAIMS

Claims 1-3 are pending in this application. Claims 1-3 stand under Final Rejection, from which rejection of claims 1-3 this appeal is taken. No other claims are pending.

## STATUS OF AMENDMENTS

No Amendments to the claims were filed After Final rejection.

## SUMMARY OF INVENTION

The present invention is directed to a process of treating seeds so as to prevent defective germination or defective rosette formation.

As discussed in the paragraph bridging pages 3 and 4 of appellant's specification, the plant seeds treated according to the invention are placed in a highly watery condition at a low temperature in a dark place.

As disclosed in the paragraph bridging pages 6 and 7 of appellant's specification, the highly watery condition can involve immersing the seeds in water.

As discussed in the first full paragraph on page 4 of appellant's specification, the low temperature at which the seeds are allowed to be exposed to the highly watery condition can be from 0°C to 15°C.

As discussed in the second full paragraph on page 4 of appellant's specification, the duration of time over which the seeds are exposed to the highly watery condition can be from several days to several months.

After exposure to the highly watery condition, the seed is immediately dried at a low temperature in a dark place as discussed in the 3 paragraph on page 5 of appellant's specification. As explained in the last paragraph on page 5 of appellant's specification, the drying is carried out before the seed becomes active.

As discussed in the second paragraph on page 5 of appellant's specification, the drying step is carried out under insufficient light to cause the seed to germinate and preferably is carried out in a dark place.

### ISSUE

Whether claim 1 is unpatentable over Badiu et al. in view of Smith under 35 U.S.C. §103(a).

Whether claims 2 and 3 are unpatentable over Badiu et al. in view of Evans et al. under 35 U.S.C. §103(a).

Whether claim is unpatentable over Job et al. in view of Smith under 35 U.S.C. §103(a).

Whether claims 2 and 3 are unpatentable over Job et al. Evans et al. under 35 U.S.C. §103(a).

## GROUPING OF CLAIMS

Claim 1 stands or falls separately from claims 2 and 3 which stand or fall together for the reasons set forth below.

## THE REFERENCES

The following references have been relied upon by the examiner:

U.S. 6,107,051	Job et al.	Aug. 22, 2000
Derwent Abstract of RO 113935	Badiu et al.	Jan. 19, 1996

Smith, Journal of New Seeds, Seed Soaking Damage in Some Grain Legumes, Vol. 2, November 3, 2000.

Evans et al. Starting Plants from Seed, NC State University, Horticulture Information Leaflets, Section on Light, 1999 (<http://www.ces.ncsu.edu/hort/hil/hil-8703.html>)

## BRIEF DESCRIPTION OF THE REFERENCES

Job et al. is directed to a method for determining the germination capacity of seeds which involves determining the amount of soluble globulin 11S  $\beta$  subunit in extracts of the seeds.

At column 3, line 39 *et seq.* Job et al. describes a method of “pre-germination” by “hydroconditioning at low temperature” which involves soaking seeds at sufficiently low temperatures to avoid germination.

As stated at column 3, lines 44-46, “[a]fter the treatment, the seeds are dried, which allows them to be stored.”

The reference to “After the treatment” is to be noted, because it indicates that the drying step is supplemental to the “treatment.” Moreover, Job et al. qualifies the purpose of the drying step as allowing the stored.

Badiu et al. is directed to a method to improve germination rate and reduce sugar-beet dormancy which involves immersing sugar-beet seeds for 6-8 hours in a continuous potable water current at a temperature of 15-18 °C followed by drying the seeds in a current of warm air at 30-35 °C.

Smith is a publication that addresses a study of seed soaking damage in some grain legumes. In the study, “seeds of soybean (*Glycine max*), pea (*Pisum sativum*), faba beans (*Vicia faba*) and dwarf beans (*Phaseolus vulgaris*)” were soaked in untreated water, air-enriched water and CO<sub>2</sub>-enriched water and tested for germination, membrane integrity and imbibition damage.

Smith makes the statement that: “Where soaking reduced germination, seed drying after soaking resulted in increased germination capacity, possibly because membrane integrity and embryo viability were restored upon drying.”

Evans et al. provides a list of parameters that effect seed germination, including water, temperature, oxygen, light, and media. With respect to light, Evans et al. teach that some seeds require light for germination, “[o]ther plants germinate best in the dark.” And “[s]ome plants germinate in either light or dark conditions.”

## THE REJECTION

Claim 1 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Badiu et al. in view of Smith.

Under this rejection the examiner has relied upon Badiu et al. as teaching a method of preventing defective germination by leaving plant seed to stand in a highly watery condition at a low temperature in a dark place, drying the plant seed immediately after leaving the plant seed to stand in the highly watery condition at the low temperature in a dark place before the seed become active.

The examiner relies upon Smith as teaching that drying seed after soaking results increased germination capacity.

In combining the teachings of Badiu et al. and Smith, the examiner takes the position that it would have been obvious to “follow the method steps of Badiu et al to achieve the old and well-known result of improved germination as taught by Smith.”

Claims 2 and 3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Badiu et al. in view of Evans et al.

Under this rejection the examiner has relied upon Evans et al. as teaching that light and darkness have an effect on germination depending on the plant species.

“Therefore” the examiner states “it would have been obvious....through a combination routine laboratory tests and experimentation and knowledge of the seed species, to determine light or dark requirements for a desired effect and to control germination.”

Claim 1 stands further rejected under 35 U.S.C. §103(a) as being unpatentable over Job et al. in view of Smith.

Under this rejection the examiner has relied upon Job et al. as teaching a method of preventing defective germination by leaving plant seed to stand in highly watery condition at a low temperature in a dark place, and drying the plant seed immediately after leaving the plant seed to stand in the highly watery condition at the low temperature in a dark place before the seed becomes active.

The examiner concedes that Job et al. is silent on specifically identifying the benefits of the drying step.

The examiner has relied upon Smith as teaching that drying seed after soaking results increased germination capacity.

In combining the teachings of Job et al. and Smith, the examiner takes the position that it would have been obvious to “follow the method steps of Job et al to achieve the old and well-known result of improved germination as taught by Smith.”

Claims 2 and 3 stand further rejected under 35 U.S.C. §103(a) as being unpatentable over Job et al. in view of Evans et al.

Under this rejection the examiner has relied upon Evans et al. as teaching that light and darkness have an effect on germination depending on the plant species.

“Therefore” the examiner states “it would have been obvious....through a combination routine laboratory tests and experimentation and knowledge of the seed species, to determine light or dark requirements for a desired effect and to control germination.”

## ARGUMENT

Appellants respectfully urge that claim 1 patentably distinguishes over the combination of Badiu et al. and Smith as the claimed invention is not obvious over the teachings of these references individually or in combination.

The complete Abstract of Badiu et al. is as follows:

Germination of sugar-beet seeds is increased and their dormancy reduced by the following treatment: (a) the seeds are immersed for 6-8 hrs in a vat containing a continuous potable water current of 0.25 - 0.50 m/s inlet flow velocity and of 15 - 18 deg. C; (b) the seeds are then dried in a current of warm air at 30 - 35 deg. C until their moisture content is at 14%. Drying may be combined with an encapsulation dragee-forming process.

The examiner states that Badiu et al. teaches:

... leaving plant seed to stand in a highly watery condition at a low temperature in a dark place, drying the plant seed immediately after leaving the plant seed to stand in the highly watery condition at the low temperature in a dark place before the seed become active. (underlying added)

A review of the text of Badiu et al. quickly reveals that this reference does not mention that the seeds are soaked or dried in a dark place, or dried immediately after the soaking step as the examiner states or otherwise implies in the rejection.

The examiner's characterization of Badiu et al. is incorrect and cannot serve as a basis for establishing that appellant's invention is obvious under 35 U.S.C. §103.

By relying upon Smith as teaching that drying seed after soaking results increased germination capacity, the examiner has conceded that Badiu et al. does not teach a method of increasing germination capacity (or preventing defective rosette formation).

Smith presents a study of seed soaking damage in some grain legumes.

Assuming that the examiner examines applications in the seed art, the examiner is no doubt aware that “legumes” are not at all similar to sugar beet seeds. Therefore, the teachings of Smith are not applicable to the process taught by Badiu et al.

It is believed that the examiner has relied upon the following passage of Smith as basis for the examiner’s position that Smith teaches that drying seed after soaking results increased germination capacity:

Where soaking reduced germination, seed drying after soaking resulted in increased germination capacity, possibly because membrane integrity and embryo viability were restored upon drying.

A close review of this passage and the entire text of Smith reveals that that the “increased germination capacity” referred to is in reference to the “reduced germination” caused by soaking, i.e. associated with germinating soaked seeds.

This is clear because Smith teaches that “membrane integrity and embryo viability were restored upon drying.” (underlying added).

That is, the reduced germination that was associated with soaked seeds was increased or improved when the soaked seeds were dried and the membrane integrity and embryo viability were “restored” to their original conditions.

Smith does not teach that drying seed after soaking results increased germination capacity over seeds that are not first soaked.

Accordingly, neither Badiu et al. nor Smith, alone or in combination, teach a method of preventing defective germination or rosette formation of a plant seed that involves soaking and drying plant seeds according to appellant’s claimed invention.

In conjunction with the examiner's concession that Badiu et al. does not teach improving the germination capacity of the sugar beet seeds it is pointed out that Badiu et al. only teaches immersing the seeds for 6-8 hours.

Appellant's specification discloses that the seeds are maintained in the highly watery condition for several days to several months. This indicates that Badiu et al. does not expose the sugar beet seed to the continuous flow of water long enough to produce the same effect on germination and rosette formation as appellant's invention. Again, Smith does not teach any soaking time periods.

Smith does not provide any teaching as to how long the legumes are soaked, other than mentioning that they are soaked long enough to cause imbibition damage, which would seem to adversely effect germination.

In rejecting claims 2 and 3 over the combination of Badiu et al. and Evans et al., the examiner has relied upon Evans et al. as teaching that "light and darkness have an effect on germination depending on the plant species."

"Therefore" the examiner states "it would have been obvious....through a combination routine laboratory tests and experimentation and knowledge of the seed species, to determine light or dark requirements for a desired effect and to control germination."

Evans et al. is directed to "Starting Plants from Seed" as the title indicates.

Evans et al. covers a list of parameters that effect seed germination, including water, temperature, oxygen, light, and media. With respect to light, Evans et al. teach that some seeds require light for germination, "[o]ther plants germinate best in the dark." And "[s]ome plants germinate in either light or dark conditions."

There is nothing in Evans et al. that relates to the effect of light or darkness prior to germinating seeds. Stated another way, there is nothing in Evans et al. that relates to the effect of light in pretreating seeds before they are planted.

Accordingly, neither Badiu et al. nor Evans et al., alone or in combination, teach a method of preventing defective germination or rosette formation of a plant seed that involves soaking and drying plant seeds under dark conditions according to appellant's claimed invention.

In rejecting claim 1 over the combination of Job et al. and Smith the examiner has relied upon Job et al. as teaching a method of preventing defective germination by leaving plant seed to stand in highly watery condition at a low temperature in a dark place, and drying the plant seed immediately after leaving the plant seed to stand in the highly watery condition at the low temperature in a dark place before the seed becomes active.

Job et al. describes a method of "pre-germination" by "hydroconditioning at low temperature" which involves soaking seeds at sufficiently low temperatures to avoid germination.

As stated at column 3, lines 44-46, "[a]fter the treatment, the seeds are dried, which allows them to be stored."

The reference to "[a]fter the treatment" indicates that the drying step is supplemental to the "treatment," i.e. soaking step.

In fact, the drying step is expressly taught by Job et al. as being conducted for purposes of being able to store the seeds. It is certainly well known that seeds have to be dried before storage to prevent them from decomposing.

The examiner has conceded that Job et al. "is silent on specifically identifying the benefits of the drying step.

However, it is urged that Job et al. does not teach a drying step that effects germination or rosette formation, let alone a drying step that is performed in the dark.

At column 3 lines 46-56 Job et al. mentions placing the Petri dishes containing seed into control-temperature cabinets in the dark as a part of "germination experiments and pre-germination experiments" which experiments, it is pointed out, do not involve drying the seeds after they are soaked and before they are allowed to germinate, let alone involve drying the seeds in the dark.

Accordingly, in addition to not teaching benefits associated with the drying step as the examiner concedes, it is submitted that Job et al. does not even teach a drying step as part of the "germination experiments and pre-germination experiments" nor any drying step what-so-ever that occurs in the dark or immediately after the seeds are removed from the Petri dishes.

The examiner relies upon Job et al. in combination with Smith and has relied upon Smith as teaching that drying seed after soaking results increased germination capacity.

In combining the teachings of Job et al. and Smith, the examiner takes the position that it would have been obvious to "follow the method steps of Job et al to achieve the old and well-known result of improved germination as taught by Smith."

As discussed above, Smith does not teach that drying seeds after soaking results increased germination capacity over seeds that are not first soaked.

Accordingly, neither Job et al. nor Smith, alone or in combination, teach a method of preventing defective germination or rosette formation of a plant seed that involves soaking and drying plant seeds under dark conditions according to appellant's claimed invention.

In rejecting claims 2 and 3 over the combination of Job et al. and Evans et al., the examiner has relied upon Evans et al. as teaching that as teaching that “light and darkness have an effect on germination depending on the plant species.”

“Therefore” the examiner states “it would have been obvious....through a combination routine laboratory tests and experimentation and knowledge of the seed species, to determine light or dark requirements for a desired effect and to control germination.”

As discussed above, there is nothing in Evans et al. that relates to the effect of light in pretreating seeds before they are planted.

Accordingly, the teachings of Evans et al. are not germane to either Job et al. or appellant’s claimed invention.

### CONCLUSION

For the reasons advanced above, appellant respectfully contends that the rejection of claim 1 as being obvious under 35 U.S.C. §103(a) over Badiu et al. in view of Smith is improper because the examiner has not met the necessary burden of establishing a *prima facie* case of obviousness.

Moreover, for the reasons advanced above, appellant respectfully contends that the rejection of claims 2 and 3 as being obvious under 35 U.S.C. §103(a) over Badiu et al. in view of Evans et al. is improper because the examiner has not met the necessary burden of establishing a *prima facie* case of obviousness.

Furthermore, for the reasons advanced above, appellant respectfully contends that the rejection of claim 1 as being obvious under 35 U.S.C. §103(a) over Job et al. in view of Smith is

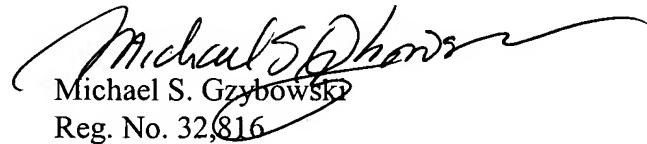
improper because the examiner has not met the necessary burden of establishing a *prima facie* case of obviousness.

Finally, for the reasons advanced above, appellant respectfully contends that the rejection of claims 2 and 3 as being obvious under 35 U.S.C. §103(a) over Badiu et al. in view of Evans et al. is improper because the examiner has not met the necessary burden of establishing a *prima facie* case of obviousness.

Reversal of each of the rejections on appeal is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,



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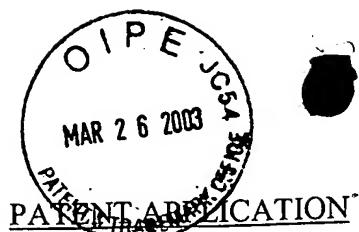
APPENDIX  
CLAIMS ON APPEAL

1. (Amended) A method of preventing defective germination or rosette formation of a plant seed which tends to suffer from defective germination or rosette formation during growth thereof comprising the steps of:

leaving the plant seed to stand in a highly watery condition at a low temperature in a dark place; and

drying the plant seed immediately after leaving the plant seed to stand in the highly watery condition at the low temperature in a dark place, before the seed becomes active.

2. The method of claim 1, wherein the plant seed is dried in insufficient light to cause the seed to germinate.
3. The method of claim 2, wherein the plant seed is dried in a dark place.



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on March 21, 2003

  
Michael S. Gzybowski

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STATUS OF AMENDMENTS

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SUMMARY OF INVENTION

The present invention is directed to a process of treating seeds so as to prevent defective germination or defective rosette formation.

As discussed in the paragraph bridging pages 3 and 4 of appellant's specification, the plant seeds treated according to the invention are placed in a highly watery condition at a low temperature in a dark place.

As disclosed in the paragraph bridging pages 6 and 7 of appellant's specification, the highly watery condition can involve immersing the seeds in water.

As discussed in the first full paragraph on page 4 of appellant's specification, the low temperature at which the seeds are allowed to be exposed to the highly watery condition can be from 0°C to 15°C.

As discussed in the second full paragraph on page 4 of appellant's specification, the duration of time over which the seeds are exposed to the highly watery condition can be from several days to several months.

After exposure to the highly watery condition, the seed is immediately dried at a low temperature in a dark place as discussed in the 3 paragraph on page 5 of appellant's specification. As explained in the last paragraph on page 5 of appellant's specification, the drying is carried out before the seed becomes active.

As discussed in the second paragraph on page 5 of appellant's specification, the drying step is carried out under insufficient light to cause the seed to germinate and preferably is carried out in a dark place.

#### ISSUE

Whether claim 1 is unpatentable over Badiu et al. in view of Smith under 35 U.S.C. §103(a).

Whether claims 2 and 3 are unpatentable over Badiu et al. in view of Evans et al. under 35 U.S.C. §103(a).

Whether claim is unpatentable over Job et al. in view of Smith under 35 U.S.C. §103(a).

Whether claims 2 and 3 are unpatentable over Job et al. Evans et al. under 35 U.S.C. §103(a).

## GROUPING OF CLAIMS

Claim 1 stands or falls separately from claims 2 and 3 which stand or fall together for the reasons set forth below.

## THE REFERENCES

The following references have been relied upon by the examiner:

U.S. 6,107,051	Job et al.	Aug. 22, 2000
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## BRIEF DESCRIPTION OF THE REFERENCES

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Badiu et al. is directed to a method to improve germination rate and reduce sugar-beet dormancy which involves immersing sugar-beet seeds for 6-8 hours in a continuous potable water current at a temperature of 15-18 °C followed by drying the seeds in a current of warm air at 30-35 °C.

Smith is a publication that addresses a study of seed soaking damage in some grain legumes. In the study, "seeds of soybean (*Glycine max*), pea (*Pisum sativum*), faba beans (*Vicia faba*) and dwarf beans (*Phaseolus vulgaris*)" were soaked in untreated water, air-enriched water and CO<sub>2</sub>-enriched water and tested for germination, membrane integrity and imbibition damage.

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Evans et al. provides a list of parameters that effect seed germination, including water, temperature, oxygen, light, and media. With respect to light, Evans et al. teach that some seeds require light for germination, "[o]ther plants germinate best in the dark." And "[s]ome plants germinate in either light or dark conditions."

## THE REJECTION

Claim 1 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Badiu et al. in view of Smith.

Under this rejection the examiner has relied upon Badiu et al. as teaching a method of preventing defective germination by leaving plant seed to stand in a highly watery condition at a low temperature in a dark place, drying the plant seed immediately after leaving the plant seed to stand in the highly watery condition at the low temperature in a dark place before the seed become active.

The examiner relies upon Smith as teaching that drying seed after soaking results increased germination capacity.

In combining the teachings of Badiu et al. and Smith, the examiner takes the position that it would have been obvious to "follow the method steps of Badiu et al to achieve the old and well-known result of improved germination as taught by Smith."

Claims 2 and 3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Badiu et al. in view of Evans et al.

Under this rejection the examiner has relied upon Evans et al. as teaching that light and darkness have an effect on germination depending on the plant species.

"Therefore" the examiner states "it would have been obvious....through a combination routine laboratory tests and experimentation and knowledge of the seed species, to determine light or dark requirements for a desired effect and to control germination."

Claim 1 stands further rejected under 35 U.S.C. §103(a) as being unpatentable over Job et al. in view of Smith.

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The examiner concedes that Job et al. is silent on specifically identifying the benefits of the drying step.

The examiner has relied upon Smith as teaching that drying seed after soaking results increased germination capacity.

In combining the teachings of Job et al. and Smith, the examiner takes the position that it would have been obvious to "follow the method steps of Job et al to achieve the old and well-known result of improved germination as taught by Smith."

Claims 2 and 3 stand further rejected under 35 U.S.C. §103(a) as being unpatentable over Job et al. in view of Evans et al.

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"Therefore" the examiner states "it would have been obvious....through a combination routine laboratory tests and experimentation and knowledge of the seed species, to determine light or dark requirements for a desired effect and to control germination."

## ARGUMENT

Appellants respectfully urge that claim 1 patentably distinguishes over the combination of Badiu et al. and Smith as the claimed invention is not obvious over the teachings of these references individually or in combination.

The complete Abstract of Badiu et al. is as follows:

Germination of sugar-beet seeds is increased and their dormancy reduced by the following treatment: (a) the seeds are immersed for 6-8 hrs in a vat containing a continuous potable water current of 0.25 - 0.50 m/s inlet flow velocity and of 15 - 18 deg. C; (b) the seeds are then dried in a current of warm air at 30 - 35 deg. C until their moisture content is at 14%. Drying may be combined with an encapsulation dragee-forming process.

The examiner states that Badiu et al. teaches:

... leaving plant seed to stand in a highly watery condition at a low temperature in a dark place, drying the plant seed immediately after leaving the plant seed to stand in the highly watery condition at the low temperature in a dark place before the seed become active. (underlying added)

A review of the text of Badiu et al. quickly reveals that this reference does not mention that the seeds are soaked or dried in a dark place, or dried immediately after the soaking step as the examiner states or otherwise implies in the rejection.

The examiner's characterization of Badiu et al. is incorrect and cannot serve as a basis for establishing that appellant's invention is obvious under 35 U.S.C. §103.

By relying upon Smith as teaching that drying seed after soaking results increased germination capacity, the examiner has conceded that Badiu et al. does not teach a method of increasing germination capacity (or preventing defective rosette formation).

Smith presents a study of seed soaking damage in some grain legumes.

Assuming that the examiner examines applications in the seed art, the examiner is no doubt aware that "legumes" are not at all similar to sugar beet seeds. Therefore, the teachings of Smith are not applicable to the process taught by Badiu et al.

It is believed that the examiner has relied upon the following passage of Smith as basis for the examiner's position that Smith teaches that drying seed after soaking results increased germination capacity:

Where soaking reduced germination, seed drying after soaking resulted in increased germination capacity, possibly because membrane integrity and embryo viability were restored upon drying.

A close review of this passage and the entire text of Smith reveals that that the "increased germination capacity" referred to is in reference to the "reduced germination" caused by soaking, i.e. associated with germinating soaked seeds.

This is clear because Smith teaches that "membrane integrity and embryo viability were restored upon drying." (underlying added).

That is, the reduced germination that was associated with soaked seeds was increased or improved when the soaked seeds were dried and the membrane integrity and embryo viability were "restored" to their original conditions.

Smith does not teach that drying seed after soaking results increased germination capacity over seeds that are not first soaked.

Accordingly, neither Badiu et al. nor Smith, alone or in combination, teach a method of preventing defective germination or rosette formation of a plant seed that involves soaking and drying plant seeds according to appellant's claimed invention.

In conjunction with the examiner's concession that Badiu et al. does not teach improving the germination capacity of the sugar beet seeds it is pointed out that Badiu et al. only teaches immersing the seeds for 6-8 hours.

Appellant's specification discloses that the seeds are maintained in the highly watery condition for several days to several months. This indicates that Badiu et al. does not expose the sugar beet seed to the continuous flow of water long enough to produce the same effect on germination and rosette formation as appellant's invention. Again, Smith does not teach any soaking time periods.

Smith does not provide any teaching as to how long the legumes are soaked, other than mentioning that they are soaked long enough to cause imbibition damage, which would seem to adversely effect germination.

In rejecting claims 2 and 3 over the combination of Badiu et al. and Evans et al., the examiner has relied upon Evans et al. as teaching that "light and darkness have an effect on germination depending on the plant species."

"Therefore" the examiner states "it would have been obvious....through a combination routine laboratory tests and experimentation and knowledge of the seed species, to determine light or dark requirements for a desired effect and to control germination."

Evans et al. is directed to "Starting Plants from Seed" as the title indicates.

Evans et al. covers a list of parameters that effect seed germination, including water, temperature, oxygen, light, and media. With respect to light, Evans et al. teach that some seeds require light for germination, "[o]ther plants germinate best in the dark." And "[s]ome plants germinate in either light or dark conditions."

There is nothing in Evans et al. that relates to the effect of light or darkness prior to germinating seeds. Stated another way, there is nothing in Evans et al. that relates to the effect of light in pretreating seeds before they are planted.

Accordingly, neither Badiu et al. nor Evans et al., alone or in combination, teach a method of preventing defective germination or rosette formation of a plant seed that involves soaking and drying plant seeds under dark conditions according to appellant's claimed invention.

In rejecting claim 1 over the combination of Job et al. and Smith the examiner has relied upon Job et al. as teaching a method of preventing defective germination by leaving plant seed to stand in highly watery condition at a low temperature in a dark place, and drying the plant seed immediately after leaving the plant seed to stand in the highly watery condition at the low temperature in a dark place before the seed becomes active.

Job et al. describes a method of "pre-germination" by "hydroconditioning at low temperature" which involves soaking seeds at sufficiently low temperatures to avoid germination.

As stated at column 3, lines 44-46, "[a]fter the treatment, the seeds are dried, which allows them to be stored."

The reference to "[a]fter the treatment" indicates that the drying step is supplemental to the "treatment," i.e. soaking step.

In fact, the drying step is expressly taught by Job et al. as being conducted for purposes of being able to store the seeds. It is certainly well known that seeds have to be dried before storage to prevent them from decomposing.

The examiner has conceded that Job et al. "is silent on specifically identifying the benefits of the drying step.

However, it is urged that Job et al. does not teach a drying step that effects germination or rosette formation, let alone a drying step that is performed in the dark.

At column 3 lines 46-56 Job et al. mentions placing the Petri dishes containing seed into control-temperature cabinets in the dark as a part of "germination experiments and pre-germination experiments" which experiments, it is pointed out, do not involve drying the seeds after they are soaked and before they are allowed to germinate, let alone involve drying the seeds in the dark.

Accordingly, in addition to not teaching benefits associated with the drying step as the examiner concedes, it is submitted that Job et al. does not even teach a drying step as part of the "germination experiments and pre-germination experiments" nor any drying step what-so-ever that occurs in the dark or immediately after the seeds are removed from the Petri dishes.

The examiner relies upon Job et al. in combination with Smith and has relied upon Smith as teaching that drying seed after soaking results increased germination capacity.

In combining the teachings of Job et al. and Smith, the examiner takes the position that it would have been obvious to "follow the method steps of Job et al to achieve the old and well-known result of improved germination as taught by Smith."

As discussed above, Smith does not teach that drying seeds after soaking results increased germination capacity over seeds that are not first soaked.

Accordingly, neither Job et al. nor Smith, alone or in combination, teach a method of preventing defective germination or rosette formation of a plant seed that involves soaking and drying plant seeds under dark conditions according to appellant's claimed invention.

In rejecting claims 2 and 3 over the combination of Job et al. and Evans et al., the examiner has relied upon Evans et al. as teaching that as teaching that “light and darkness have an effect on germination depending on the plant species.”

“Therefore” the examiner states “it would have been obvious....through a combination routine laboratory tests and experimentation and knowledge of the seed species, to determine light or dark requirements for a desired effect and to control germination.”

As discussed above, there is nothing in Evans et al. that relates to the effect of light in pretreating seeds before they are planted.

Accordingly, the teachings of Evans et al. are not germane to either Job et al. or appellant’s claimed invention.

### CONCLUSION

For the reasons advanced above, appellant respectfully contends that the rejection of claim 1 as being obvious under 35 U.S.C. §103(a) over Badiu et al. in view of Smith is improper because the examiner has not met the necessary burden of establishing a *prima facie* case of obviousness.

Moreover, for the reasons advanced above, appellant respectfully contends that the rejection of claims 2 and 3 as being obvious under 35 U.S.C. §103(a) over Badiu et al. in view of Evans et al. is improper because the examiner has not met the necessary burden of establishing a *prima facie* case of obviousness.

Furthermore, for the reasons advanced above, appellant respectfully contends that the rejection of claim 1 as being obvious under 35 U.S.C. §103(a) over Job et al. in view of Smith is

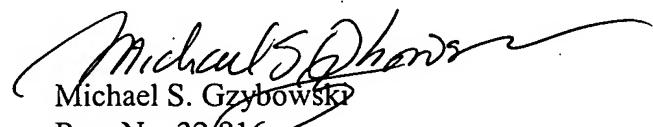
improper because the examiner has not met the necessary burden of establishing a *prima facie* case of obviousness.

Finally, for the reasons advanced above, appellant respectfully contends that the rejection of claims 2 and 3 as being obvious under 35 U.S.C. §103(a) over Badiu et al. in view of Evans et al. is improper because the examiner has not met the necessary burden of establishing a *prima facie* case of obviousness.

Reversal of each of the rejections on appeal is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,



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